In the claims:

1. (Currently Amended) A cardiopulmonary bypass circuit for use with a patient, said bypass circuit comprising:

a pump for pumping blood from the patient through the bypass circuit;

a particulate filter disposed in the cardiopulmonary bypass circuit;

a venous cannula in fluid communication with the pump, said venous cannula adapted for fluid connection to the venous system of a patient;

~~An~~ an apparatus adapted for removing gas bubbles from blood passing through the bypass circuit, said apparatus comprising:

an axially elongate cylindrical shell defining a chamber;

an impeller disposed within the chamber;

a motor operably connected to the impeller,

a gas vent in fluid communication with the central axis of the chamber and located proximate the top of the chamber,

a blood inlet port affixed to the chamber and in fluid communication with the venous cannula; and

a blood outlet port located at the radial periphery of said chamber;

~~wherein the chamber diameter is approximately constant in the region between the blood inlet port, the blood outlet port, and the impeller;~~

wherein the impeller is configured to ~~directly~~ rotate a volume of blood within the chamber about the central axis of the chamber thus forcing air bubbles within the volume of blood to migrate radially inwardly ~~inward~~ in response to centrifugal forces imparted on the volume of blood by the rotation of said blood;

an arterial cannula in fluid communication with the blood outlet port, said arterial cannula adapted for fluid connection to the arterial system of the patient.

Claims 2 through 30 (cancelled)